

$$\boxed{49} \quad (\text{a}) \quad \tan\left(\frac{\theta}{2}\right) = \frac{1}{d} \Rightarrow d = \frac{1}{\tan\left(\frac{\theta}{2}\right)} = \cot\left(\frac{\theta}{2}\right)$$

$$(\text{b}) \quad \theta = 1^{\circ}45'15'' \Rightarrow d = \cot\left(\frac{1^{\circ}45'15''}{2}\right) \approx 65.32 \text{ m}$$